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ABSTRACT

A seminar on the promotion of international cooperation and peace through environmental education (EE) within the framework of the UNESCO Associated Schools Project was held in Norway. The seminar was held against the background of increasing concern about environmental questions and an increasing awareness that the well-being and the future of the world depend upon reaching and maintaining harmony of nature and humankind. The seminar had three specific objectives: (1) to identify EE activities carried out by the Associated Schools; (2) to examine effective teaching materials, approaches and materials developed by the Associated Schools; and (3) to prepare the framework for a teacher's handbook for use in European secondary schools. Included in this document are: (1) a summary of deliberations; (2) a definition of the goals of EE; (3) a review of the status of EE in Associated Schools; (4) a review of the content, approaches and effective teaching methods for EE in Europe; (5) recommendations; and (6) the guidelines for the preparation of a teacher's guidebook on environmental education. (CW)

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EUROPEAN ENVIRONMENTAL EDUCATION FOR OUR COMMON FUTURE

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SEOSI 686

REPORT FROM
UNESCO SEMINAR AT
LILLEHAMMER, NORWAY
7-12 MAY 1989

NORWEGIAN NATIONAL COMMISSION FOR UNESCO

The Norwegian National Commission for Unesco

EUROPEAN REGIONAL SEMINAR

Report

EUROPEAN ENVIRONMENTAL EDUCATION FOR OUR COMMON FUTURE

WITHIN THE FRAMEWORK OF THE ASSOCIATED SCHOOLS PROJECT

AND THE UNESCO/UNEP

INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

Lillehammer, Norway

May 7-12, 1989

EUROPEAN REGIONAL SEMINAR

on

ENVIRONMENTAL EDUCATION FOR OUR COMMON FUTURE

Lillehammer, Norway

7-12.5.89

INTRODUCTION

At the invitation of Unesco, the Norwegian National Commission for Unesco organized a European Regional Seminar on the promotion of international cooperation and peace through environmental education within the framework of the Associated Schools Project. The seminar was organized in cooperation with Unesco-UNEP, the Norwegian Ministry of Church and Education, the Norwegian Council for Upper Secondary Education and the Norwegian UN Association. The seminar took place in Lillehammer, the town chosen to host the 1994 Winter Olympic games.

The seminar was held against a background of increasing concern about environmental questions and an increasing awareness that our well-being and the future of our world depend upon our reaching and maintaining harmony of nature and humankind. "Our Common Future," the 1987 report of the United Nations World Commission for Environment and Development (WCED) describes the rapid deterioration of the global environment. In order to reverse these trends, there is an urgent need for commitment and action at all levels of society. The protection of the environment must become an integral part of all economic and industrial planning, and urgent measures are needed in particular to halt air and water pollution. We are borrowing the resources of tomorrow's generations.

The seminar had three specific objectives:

1. Identify activities in the area of environmental education carried out by Associated Schools with a view to promoting international cooperation and peace.

2. Examine effective teaching methods, approaches and materials developed by Associated Schools.

3. Prepare the framework for a teacher's handbook on "Environmental education for our common future," for use in secondary schools throughout Europe.

During the course of the seminar these objectives became slightly modified. In view of the importance of introducing environmental education at an early age and as an integral part of vocational education, it was decided by the seminar participants that the handbook should also address environmental education in pre-schools, primary schools, and vocational training schools. It was also felt that a thorough examination and compilation of environmental education materials used in the Associated Schools was not realistic in the short time span of the seminar.

Delegates from the following countries attended the seminar: Austria, Bulgaria, Canada, Cyprus, Czechoslovakia, Denmark, Finland, the German Democratic Republic, the Federal Republic of Germany, Hungary, Italy, Norway, Poland, Portugal, Spain, Sweden, the Ukranian Soviet Socialist Republic, and the Union of Soviet Socialist Republics. In addition, representatives from a number of Norwegian organizations and institutions attended as observers (a list of participants and observers is appended).

The seminar was opened by the Secretary General of the Norwegian National Commission for Unesco, Ms. Ingeborg Breines, and a representative of the Director-General of Unesco, Ms. Elizabeth Khawajkie, who presented the background for the seminar and outlined its goals. During the seminar a representative of the Unesco-UNEP International Environmental Education Programme, Mr. Mamadou Cissé, informed about present and planned activities in this programme.

The seminar participants elected 2 chairpersons (Ms. Eva Nordland and Ms. Karen Brit Feldberg, representing the organizers in Norway) and 2 vice-chairpersons (Mr. Xenophon Christophides of Cyprus and Ms. Vera Gnes of the USSR) as well as a main rapporteur (Mr. Jozsef Bendik of Hungary) and two assistant rapporteurs (Ms. Faye Benedict and Mr. Donald MacCulloch from the Norwegian organizers).

To facilitate the exchange of information about the state of environmental education programs in each country, the participants were asked to prepare in advance a report on programs in environmental education, especially in schools participating in the Associated Schools Project (ASP), which they also presented during the seminar. These country reports were distributed to the participants. Information about ongoing work in participating countries was also exchanged through displays of materials and student productions the participants had brought for this purpose.

The participants discussed and reflected upon the goals, status, methods, and problems of environmental education in Europe through lectures, workshops, and plenum discussions. In addition several practical illustrations of these topics were arranged for the participants: field trips to an open air museum illustrating the environmental past of Lillehammer, a tree nursery and a hydroelectric power plant as well as discussion of the environmental future of Lillehammer in light of the coming Olympic arrangement, presentation of environmental education

projects by students from a Norwegian primary school and secondary school, and a presentation of an alternative community model called EcoValley, in southwestern Norway.

This balance of theoretical discussions and practical applications and illustrations of environmental education provided an appropriate atmosphere in which the participants exchanged views and reached conclusions about what directions environmental education for our common future could take in the years to come in Europe. The discussions were intense and the participants wholly committed: a sense of urgency and concern was shared by all the participants to contribute to the solving of environmental problems and the promotion of international understanding and peace. At the same time the meeting was characterized by a strong sense of optimism, objectivity, pragmatism, and the belief that solutions to local, regional and global environmental problems can and must be reached through environmental education and international cooperation.

The seminar concluded with an evaluation session.

SUMMARY OF DELIBERATIONS

The summary of deliberations below follows the sequence of topics considered at the seminar:

1. Definition of the overall goals of environmental education to promote international understanding and peace.

2. Indication of the present status and concerns of environmental education in participating countries and identification of illustrative examples of environmental education projects.

3. Identification of content areas, pedagogical approaches and teaching methods and how these can be integrated in environmental education projects.

4. Recommendations regarding future actions that should be taken to further environmental education in the context of ASP schools and the Unesco/UNEP IEEP program, and

5. Preparation of a teacher's handbook on environmental education for use by teachers of nursery school through secondary and vocational and technical schools.

1. DEFINITION OF THE GOALS OF ENVIRONMENTAL EDUCATION IN EUROPE TO PROMOTE INTERNATIONAL UNDERSTANDING AND PEACE

The seminar participants discussed in workshops and agreed to a set of goals upon which environmental education in Europe should be based. The topic was first introduced in a talk by Prof. Eva Nordland.

Participants' views of the goals of environmental education in Europe

The seminar participants discussed and agreed upon the following main goals on which environmental education in Europe should be based:

1. To reinforce children's innate love of nature.

2. To encourage an ethic of respect and responsibility for the environment.

3. To give knowledge and develop attitudes and abilities that will enable students to participate actively in protecting and improving the environment.

4. To develop a lifelong commitment to environmental protection.

5. To promote a holistic understanding of all sides of environmental problems at the global and local levels as a

basis for solving them: "think globally -- act locally."

6. To stimulate new patterns of behavior and lifestyles that are consistent with equitable and ecologically sound management of world resources.

7. To increase awareness of regional environmental problems and the necessity for solidarity and cooperation among all European countries to solve them.

8. To promote a responsible role of Europe in the world community in solving global environmental problems.

2. THE STATUS OF ENVIRONMENTAL EDUCATION IN ASSOCIATED SCHOOLS WITH A VIEW TO PROMOTING INTERNATIONAL COOPERATION AND PEACE: ACTIVITIES, CONCERNS, AND EXAMPLES

Each seminar participant presented a report on the state of environmental education to promote international cooperation and peace in his or her country, focusing on the role of ASP. These reports were distributed to the participants. The following summarizing comments are based on the reports and a plenary discussion of the status of environmental education today in Europe.

1. Many countries have enacted policy to integrate environmental education in all levels of schools.

2. However, the goal of infusing environmental education throughout the curriculum has not yet been fully accomplished. But there has been an increasing number of individual and school initiatives taken at the local level. The role of concerned teachers and initiatives taken by them should not be underestimated.

3. Themes that were common in several countries included water pollution, the school environment, nature studies, and historical studies. In some countries, environmental education is being introduced in an interdisciplinary way, and several examples were given of projects combining the natural and social sciences. However, in many of the countries environmental education is being approached more

through individual subjects and projects emphasizing the natural sciences.

Some of the shared concerns that several delegates mentioned were:

* Environmental education should not be treated as subject in a traditional sense, but as a goal and a program integrating all subjects.

* Knowledge gained through environmental education should be applied, both by students and by society, in various types of projects, in problem-solving, cooperation, and lifestyle and behavior changes.

* Parents have an important role to play in environmental education, and should become involved to support and develop the children's love of nature and to support practical projects, activities and lifestyle changes related to environmental education.

* Environmental education is too often approached sectorally, theoretically, and with too little involvement of the family and community.

* Lack of legislation securing environmental education and vague definition of responsibility for implementation of existing legislation are often obstacles to developing good programs.

* Environmental education is often introduced at too late an age in the school system.

* Unclear definition of goals and lack of teaching materials are a problem. For example, the WCED report Our Common Future and other published source materials are not readily available in many countries.

* It is essential that teachers receive stimulation and support in their efforts, for example through teaching materials and frequent seminars.

* There is a need for a handbook that combines theory, practice and experiments. It should present many examples, and give special emphasis to European environmental problems. Suggestions should be made as to how different topics can be dealt with in different subjects and at different age levels.

Experiences from 18 countries: some highlights from the national reports

Although it is not possible to report fully here on the status of environmental education in the countries represented at the seminar, it is nevertheless useful to mention briefly some examples of trends and areas of progress in environmental education that were mentioned by the delegates in their country reports. The full country reports are available through the national commissions for Unesco.

Approaches to environmental education

In many countries the theme of an ethic of nature conservation and protection forms the basis for environmental education programs. Development of ecological attitudes is seen as a main goal to be focused on in the **USSR**. The type and amount of detailed knowledge that the students need in various disciplines, is still an open question. In **Bulgaria** emphasis is given to the æsthetic and moral sides of environmental education and the development of an ecological culture through active participation to protect the environment. In the **Ukraine**, much work has been done on development of young children's love of nature at the primary school level. The humanistic perspective and the connection between environment, peace, and personality development is emphasized in the **GDR**.

In other countries such as **Sweden**, **Denmark**, **Spain** and others, the emphasis seems to be put more on knowledge and field work in the natural sciences. An attitude of responsibility for the environment will evolve naturally as the students learn about various species and ecosystems and participate actively to protect them.

In **Poland**, advances have been made in teaching ecosystem ecology as a cornerstone of environmental education. Partly as an aftereffect of the International Biological Program, ecology has been a subject at the university level since the early 1970's, at the secondary school level since the mid-1970's, and at the

primary school level since the early 1980's. The goal is to develop an understanding of ecological systems' structure and function as a basis for proper resource management. Experimental field work (effects of pollution on terrestrial and aquatic communities, accumulation of heavy metals in food chains, forest succession, effects of agricultural chemicals on soil, etc.) is an important part of the program. This emphasis on understanding of ecosystem function rather than preservation has required extensive training programs for teachers.

National and international cooperation

Several delegates mentioned the importance of cooperative projects, both at the national and international level. In the **Ukraine**, a cooperative project is now being undertaken in several ASP schools on "Interaction of ecological education and upbringing in the spirit of international mutual understanding," which will produce a manual at its completion. **Italy** is also aiming to coordinate ASP school activities in the field of environment. **Austria** has had several "campaigns" involving hundreds of schools, for example "Ecology of daily school life" and "Environment has its history." Austria is also involved in international projects like the OECD/CERI project "Environment and School Initiatives" and the Global River Environmental Education Network (GREEN, led by Univ. of Michigan). In **Norway**, several cooperative projects focused on environmental monitoring have been undertaken or are in planning. These include at the national level a lake surveillance project and monitoring of

ozone levels, and at the international level Coast Watch and Acid Watch. The increasing number of computer networks both nationally and internationally will in the future also provide exciting opportunities for cooperation and communication among schools, exchange of results, etc. USSR and Canada, among others, are now gaining experience in this field.

In the context of ASP schools, an international project is now being planned in Finland about the Baltic Sea, that will involve countries bordering the sea. The project has three parts: research, followup, and dissemination of information. The project work will be integrated into both natural and social science subjects. Communication among schools via computer network has been considered for this project.

In the years to come, the increasing number of national and international cooperative projects about the environment will give a background of experience on which to evaluate the best ways to plan, carry out, and analyze and disseminate results from such projects.

Interdisciplinary approach

Many of the countries represented at the seminar indicated that environmental education was being integrated into all subjects in the school system, and that the curricula had been or are being revised to give more weight to environmental education - both the natural sciences and social sciences aspects. The

progress that many countries have made in curriculum development is very important and encouraging.

As regards adoption of an interdisciplinary as opposed to multidisciplinary approach, there were relatively few examples of courses treating environmental issues in an integrated way and of projects that integrated the natural and social sciences. There appeared to be a need to define interdisciplinarity and to clarify how an interdisciplinary study of an environmental issue could be carried out.

The reports by Hungary and the USSR both pointed out clearly the close interrelationship of economy and ecology and the need to find the initial causes of environmental problems that are socio-economic in nature. The cost of damage to the environment is now becoming so high in some countries, for example the USSR, that solving the ecological problems becomes imperative on the basis of economics. This echoes the message of the report of the WCED. In Hungary a program is underway in ASP to introduce education for environmental protection in the spirit of the WCED report, and the National Commission for Unesco has supplied ASP schools with copies of the report in Hungarian as a source material for this integrated approach. However, in some of the countries represented at the seminar, the WCED report was not readily available to teachers.

An interdisciplinary approach is now being developed as pilot projects in the USSR (including some ASP schools). Methods

including team teaching, debating, role-playing, field studies and computer simulation and ecological modelling are being explored. An integrated course on environmental problems at the national and local level is available for seniors in some schools, in addition to a more well-established course on nature conservation. At the university level, a new course in "Principles of rational utilization of natural resources" is starting this year. In the **Ukraine**, a course on environmental protection is available to seniors in some schools. In **Cyprus** an interdisciplinary course in environmental studies is being introduced from 1989 at the secondary school level.

One example of an established curriculum based on an interdisciplinary approach was presented from **Oberstufenkolleg, Univ. of Bielefeld, FRG**. At this university in the scientific line of study, the semesters are structured around projects and "interdisciplinary supplements" rather than around the traditional disciplines. Basic courses in ecology and technique are also given. Experiences from this college are now being evaluated by a working group of ASP school teachers as a model for introducing interdisciplinary environmental education into ASP schools in FRG.

Efforts to introduce environmental education appeared to have come furthest in the primary schools in many countries, and focused on developing children's understanding of and love of nature. Many positive developments were also reported at the secondary school and university level. There was, however, very

little mention made of introduction of environmental education into vocational training schools. In **GDR** at the ASP Salvador Allende Polytechnical School in Berlin, principles of environmental protection and resource management are integrated into the technical instruction and production work. In **Norway**, a curriculum has been developed for a 38-hour course on environment and development for vocational schools. Vocational schools in **Finland** are individually responsible for developing a curriculum that includes environmental issues. There appears to be a need to concentrate more effort on introduction of environmental education in vocational training schools generally, especially in view of the important role that the graduates have in managing the environment.

Implementation of environmental education

The development of environmental education in the countries represented at the seminar has followed very different routes. As mentioned above, many countries have revised their curricula at the national level to include topics on the environment in many or all subjects. In addition, various types of organizations have evolved within each country to promote environmental education.

The delegates from **FRG** and **Spain** reported that national working groups of teachers of environmental education had been formed to help implement environmental education. The educational and environmental authorities have formally cooperated to develop

environmental education in **Austria**, **Finland**, and **Portugal**. Cooperation with the environmental authorities is important in many other countries as well, especially with regard to teacher training and planning and carrying out of field projects.

Planning and coordination at the local level is given emphasis in **Finland**, where curriculum development occurs at the municipal level, and in **Czechoslovakia**, where one teacher at each school has responsibility for coordination of environmental education. In **Norway**, "contact groups" have been formed in each county to promote environmental education, comprised of leaders from industry, politicians, and representatives of various ministries at the county level as well as educators.

It is hardly possible to overstate the importance of NGO's and out-of-school activities in environmental education. This is undoubtedly true for all countries attending the seminar, but was especially underlined by the delegates from **Bulgaria**, **Czechoslovakia**, **GDR**, **Portugal**, **Ukraine**, and the **USSR**. In the USSR, for example, the Nature Conservation societies have over 40 million members of all ages, and in Bulgaria and Czechoslovakia, as well as other countries, student ecological clubs organize many extracurricular, volunteer activities where students learn about and help protect the environment. The nature clubs in Eastern Europe also cooperate, providing excellent opportunities for international exchange of ideas and experiences regarding the environment.

An important step in the implementation of environmental education is evaluation of progress and programs, so that future developments can be steered toward approaches and methods that have been shown to work well. So far, this kind of evaluation appears to be generally weak. One exception is the Centre for Environmental Education in **Austria**, an institute established in 1983. This center has responsibility for collecting and disseminating reports from school environmental projects, as well as evaluating the projects. The center has also studied trends in environmental education in Austria and found that the number of projects, both small and large, has increased in recent years, and that the degree of interdisciplinarity in these projects has also increased.

Methods in environmental education

Field work is a teaching method especially well suited to environmental studies, as was well illustrated in a slide show of students in action by the delegate from **Italy**. In **Sweden**, a field station at Angsholmen provides secondary school students from the city of Stockholm with the opportunity to carry out field work at a lake for 1 day. Under the guidance of staff and using equipment at the station, the students describe the chemical and biological characteristics of the lake and the impact of pollution. During the course of 10 years the station has been visited by 7500 students. The new course in environmental studies in **Cyprus** for secondary school students is based entirely on field projects. The students take 6 1-day excursions to places of ecological significance (factories, power

plants, natural areas) and base their studies and discussions on these.

As mentioned above, much work is being done in the **USSR** and other countries to develop methods such as debate, role playing, use of computer models and simulations (coordinated by Kazan University) for use in environmental education. In **Canada**, development of group working methods for primary and secondary school students is also clearly relevant for environmental education programs.

Teacher training

The approaches taken to teacher training for environmental education vary greatly in the countries represented at the seminar. In some countries, including **Norway** and **Ukraine**, special programs or courses on environmental protection or environmental studies are being or have been developed as a part of the regular teacher training or in-service training. In **Denmark**, ASP coordinates 2-3 day teacher training seminars, many of which are relevant to environmental education. As noted in the report from **Poland**, teachers trained in biology and nature conservation may need additional training to be able to teach environmental studies based more on concepts of ecological dynamics and resource management. It may also be unrealistic to expect teachers to be able to teach interdisciplinary topics without additional training.

Regarding the development of teaching materials, many of the delegates brought and displayed examples of materials developed in their countries. **Spain**, for example, has developed sets of beautifully illustrated work packets in the natural sciences for the primary and secondary schools. In **Norway**, work is underway to revise and update a series of 91 booklets (teacher guides) on environmental studies for use in primary and lower secondary schools.

The seminar participants were in agreement that increased support to teachers in the form of training and materials is necessary in order to successfully implement environmental education. There is a great need for the proposed teacher's guidebook on environmental education.

3. IDENTIFICATION OF CONTENT, APPROACHES AND EFFECTIVE TEACHING METHODS AND THEIR INTEGRATION IN ENVIRONMENTAL EDUCATION PROJECTS

The topic was introduced in talks by Mr. Per Bjørn Foros and Mr. Helge Beiteland. With this background the participants then discussed in groups their own experiences with environmental education projects, in particular 1) pedagogical goals, problems and solutions, 2) appropriate contents, 3) teaching methods and 4) how the pedagogical approaches, contents, and teaching methods interact for a given topic.

The seminar participants agreed that the 3 topics (goals, contents, and teaching methods) should be dealt with in depth in the proposed guide for teachers, but that it is also very important to examine these elements simultaneously in an integrated approach to environmental education.

Pedagogical goals

Regarding the pedagogical goals, these can be grouped into affective/emotional goals (developing children's love of nature and fellow humankind); moral/attitudinal goals (developing an ethic of environmentally responsible behavior); and cognitive goals (acquiring knowledge and skills that will enable one to contribute to environmental protection). Very different kinds of problems arise in trying to achieve these three types of goals, and different solutions are needed. For example, developing children's love of nature will require increased access to and contact with nature; developing attitudes and responsibility will require increased opportunity for reflection

about the global environment and the future, as well as opportunities for the individual to take action to protect the environment; and acquiring knowledge about the environment will require improved access to up-to-date and reliable information, teacher training, international exchanges, etc.

Content

The content of environmental education should definitely include both the natural and the constructed environment. As pointed out by Mr. Lloyd Timberlake in his lecture, "there are no environmental problems" : that is, all problems of the environment are at their roots problems of economy, politics, and the social and cultural environment. Environmental education should seek to find solutions to the problems through an analysis of their causes. The content of environmental education must therefore be interdisciplinary and problem-oriented, and integrate the natural and social sciences.

The content of environmental education should be based on the local situation, but should take into account the regional and global aspects of the problem. It is important not to overlook environmental issues that do not seem to be local, such as depletion of the ozone layer, the greenhouse effect and deforestation. Environmental education should clarify how global issues relate to the local environment, and consider how the individual and community can contribute to solving both the local and global-level problems.

Environmental education should give emphasis to regional European environmental issues such as pollution of rivers flowing through several countries and management of shared resources such as fisheries and air. Ecogeographical units such as the Baltic Sea, the North Sea, and the Danube River present a great challenge to international environmental cooperation. As Dr. Arthur Westing pointed out in his lecture, environmental problems don't respect political boundaries, and resources shared by several countries must also be managed in cooperation. Ecogeographic units such as the Baltic Sea, North Sea and Danube River also provide excellent subject matter for cooperative international school projects on the environment.

The seminar participants felt that ASP should coordinate international cooperative school projects on regional environmental problems and challenges. International school cooperation to monitor the environment is potentially one of the most promising and exciting ways to promote international cooperation and peace.

During the seminar, energy was discussed as an illustrative example of a fundamental topic in environmental education. Energy at first look appears to be a natural sciences subject, including environmental impact of different kinds of renewable and nonrenewable energy use. However, this topic also illustrates the importance of the historical, political, and international aspects of environmental issues; the role of individual consumers in shaping both the local and global environment; and the need for solidarity with other countries and future generations

regarding the environment.

Teaching methods

Traditional classroom teaching methods are in many cases poorly suited to carrying through the goals and contents of environmental education discussed above. It is important that the teacher's guidebook should give concrete information about and examples of appropriate and effective teaching methods for environmental education at various age levels.

One of the most important methods identified by the seminar participants is the interdisciplinary, project approach. This should be the basic teaching method if the goals of holistic understanding and change of attitudes through participation are to be achieved. Many schools and projects have worked to develop this method, but so-called interdisciplinary projects are actually often multidisciplinary, and do not fully integrate the different subjects. The teacher's guidebook should describe and give examples of good interdisciplinary projects. Because the present school structure in most European countries (especially in secondary school) is not well suited to this method, policy changes should also be made so that interdisciplinary, project-oriented environmental education can become a permanent part of the curriculum, transversing traditional subject boundaries. Some schools, however, seem to have such a structure already. An example is the Oberstufenkolleg in Bielefeld, FDR.

Group work and student participation are essential. The students

should learn to cooperate by cooperating and learn to be responsible by taking responsibility. Games and simulations are particularly useful tools for training in role-playing and decision-making. Cooperation among schools both nationally and internationally is also effective. The handbook should give details about all of the above teaching methods.

Integration of goals, contents and teaching methods

The pedagogical goals, the contents, and the most effective teaching methods are all very dependent on each other. It is the teacher who must integrate and fuse these into an environmental education program or project. The teacher's personality, commitment to protecting the environment, perceptions of environmental problems both local and global, ability to deal with the social and political sides of environmental issues, and ability to lead out-of-classroom activities in the community and in natural surroundings, will influence his or her choice of contents and teaching methods and will to a large extent determine how well the program achieves the goals of environmental education.

Because of the great challenge that this poses to the individual teacher, every effort should be made to help and inspire teachers. New materials (including the proposed guidebook) should be developed, training opportunities should be provided, and teachers should be given the opportunity to participate in frequent national and regional seminars on environmental education.

4. RECOMMENDATIONS OF THE SEMINAR ON ENVIRONMENTAL EDUCATION FOR OUR COMMON FUTURE IN THE CONTEXT OF THE ASP AND THE UNESCO-UNEP INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAM

The European regional seminar:

- in accordance with the Unesco 1974 declaration, the Tbilisi declaration of 1977 and the International Strategy for Environmental Education and Training (Moscow 1987),

- referring to the recommendations of the MINEDEUROPE-4 conference concerning the role of Associated Schools in fostering the humanistic, cultural, and international dimension of education,

- feeling a moral commitment to the dissemination and implementation of the recommendations of the WCED report,

RECOMMENDS TO THE DIRECTOR-GENERAL OF UNESCO:

1. To provide financial assistance for the production and dissemination of a teachers' guidebook on promotion of peace and international understanding through environmental education.

2. To encourage cooperation between the information, audiovisual and clearinghouse services of Unesco and the environmental education programs of ASP schools.

3. To consider establishing a clearinghouse of printed matter and audiovisual material on environmental education available at Unesco and National Commissions. To publish a bibliography of available material and new acquisitions through Connect.

4. To ensure coverage of the environmental education activities on the satellite broadcasts offered to Unesco and to organize live TV bridges between ASP schools in different countries.

5. To encourage IEEP in developing and providing ASP schools with teaching materials for environmental education including didactic games and computer simulations.

6. To consider organizing within the framework of the international literacy year a European regional seminar on Environmental Literacy.

RECOMMENDS TO THE NATIONAL COMMISSIONS FOR UNESCO OF THE EUROPE REGION TO ENHANCE PARTICIPATION OF THE ASP SCHOOLS IN THE UNESCO-UNEP INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAM:

1. To encourage and motivate ASP school principals and teachers in their environmental education programs.

2. To promote national-level and regional-level cooperation

among ASP schools in the area of environmental education, for example: summer camps, ecological brigades, monitoring of endangered species, student conferences and exhibitions, and contact among Unesco clubs and nature clubs.

3. To contribute to the production of a teachers' guidebook on environmental education for our common future and its translation into other languages:

   A. To assist in the work of the coordinator and editorial board members for the guidebook.

   B. To provide descriptions of ongoing environmental education projects at the pre-primary, primary, secondary and teacher training schools in their respective countries.

4. To mobilize local and national media to cover environmental education projects of Associated Schools, and encourage ASP schools to make use of Unesco audiovisual materials.

RECOMMENDS TO THE ASP SCHOOLS OF THE EUROPE REGION:

1. To include study and dissemination of the WCED report in their activities.

2. To "act locally - think globally": disseminate ideas on environmental issues and initiate and continue action at the family, community and local levels.

3. To encourage the participation of students and teachers in out-of-school community and local activities on environmental issues.

4. To promote a holistic understanding of the environment and an interdisciplinary approach to environmental education.

5. To include environmental education in international student and teacher exchange programs.

6. To initiate and carry out joint international environmental projects.

7. To undertake comparative studies of selected environmental problems in different cultural contexts.

8. To encourage students to produce, disseminate and exchange bulletins and media materials on environmental education projects.

9. To use the pool of printed matter and audiovisual materials available at Unesco and the National Commissions through the clearinghouse system of Unesco.

5. PREPARATION OF A TEACHER'S GUIDEBOOK ON ENVIRONMENTAL EDUCATION FOR OUR COMMON FUTURE

The seminar participants felt a great need for a practical teacher's guide on environmental education for use by teachers at pre-school to secondary school level. Although the goal initially was to develop a guide for secondary school teachers, the seminar participants felt that it was also important to address environmental education in pre-schools, primary schools, and vocational/training schools.

Such a guide should be attractively presented, and should include a brief presentation of the conceptual framework for environmental education to promote peace and international understanding. The main body of the guide should emphasize examples of programs at various age levels that are illustrative of the principles of effective environmental education.

The guide should not attempt to be an exhaustive methodological reference work, but should rather mention types of environmental problems, ways to approach them, and classroom-level teaching methods that are approriate for the various age levels. The guide should also contain a bibliography of source materials, and should treat particularly relevant topics in greater depth, such as how to employ media coverage and media methods, how to manage group work, and evaluation methods. The guide would be aimed primarily at teachers in ASP schools, but would also be relevant for teachers in other schools.

A tentative table of contents for such a guide book was proposed, discussed and agreed upon by the seminar participants:

TEACHERS' GUIDE TO ENVIRONMENTAL EDUCATION

FOR OUR COMMON FUTURE

FOREWORD (by Gro Harlem Brundtland?):

The role of teachers in solving world environmental problems.

INTRODUCTION

1.1 The purpose of the guide

1.2 How to use the guide

1.3 Glossary of terms

PART 1. WHAT DOES IT MEAN TO BE A HUMAN BEING AT A TIME OF CRISIS? The message of the WCED report.

2.1 Common concerns

2.2 Common challenges

2.3 Common endeavors

PART 2. A CONCEPTUAL FRAMEWORK FOR ACTION

3.1 Shaping future-oriented value systems

3.2 Developing a holistic understanding of the environment

3.3 Acting locally-thinking globally

3.4 International interdependence, solidarity and cooperation

3.5 Social environment, conflict resolution and decision making

PART 3. WHAT THE SCHOOL CAN DO: PEDAGOGICAL APPROACHES, CONTENTS, AND TEACHING METHODS (Each chapter will highlight illustrative examples).

4.1 What can be done in pre-schools?

4.2 What can be done in primary schools?

4.3 What can be done in secondary schools?

4.4 What can be done in technical and vocational training?

4.5 What action can be taken in teacher training?

4.6 What can families and communities do to support the school?

4.7 The role of the media

4.8 Ways to attract sources of funding

4.9 Promoting international communication and exchanges

APPENDIX

5.1 Bibliography of source materials and audiovisual aids

EUROPEAN REGIONAL SEMINAR ON THE PROMOTION OF COOPERATION AND PEACE THROUGH ENVIRONMENTAL EDUCATION WITHIN THE FRAMEWORK OF THE UNESCO ASSOCIATED SCHOOLS PROJECT

Lillehammer, Norway, 7-12 May 1989

PROGRAMME

Sunday, 7 May

8.00 p.m.		Dinner
9.00 p.m.		Welcome, presentations Introduction to Lillehammer - the future Olympic Games Site: Inge Aarhus.

Monday, 8 May

9.00 a.m.	1.	Opening of the seminar: Ingeborg Breines, Norwegian National Commission for UNESCO, Elisabeth Khawajkie, representative of the Director-General of UNESCO.
9.30 a.m.	2.	Definition and discussion of the goals of environmental education to increase international cooperation and peace: Eva Nordland, University of Oslo.
11.00 a.m.		Group work on Item 2.
12.30 p.m.		Lunch
2.30 p.m.		Presentation of group findings and conclusion on Item 2.
3.00 p.m.	3.1	Presentation and discussion of ASP activities in the fields of environmental education and international education.
6.30 p.m.		Performance, the Norwegian ASP-school, Fjell.
7.30 p.m.		Dinner
9.00 p.m.		Eco Valley, presentation.

Tuesday, 9 May

9.00 a.m. Continuation on Item 3.

11.15 a.m. 3.2 UNESCO/UNEP present and future priorities in promoting international cooperation and peace through environmental education:
M. Cissé, representative of the Director-General of UNESCO.

11.30 a.m. Coffee break.

12.30 p.m. 4. Attainment of goals of environmental education at local and global levels.

4.1. Environmental education at the local level: case study of Lillehammer.

4.1.A Energy and development:
Einar Oterholm

4.1.B Visit to the museum of Maihaugen, forest nursery at Biri and to power station at Mesna.

Lunch at the forest nursery.

8.00 p.m. Dinner

9.00 p.m. Continuation and conclusion on Item 3.

Wednesday, 10 May

9.00 a.m. 4.2. Environmental education and development at local/classroom level.

4.2.1 From experience to attitude
Think globally, act locally:
Per Bjørn Foros.
Presentation by the Norwegian ASP-school, Stokkan: Helge Beitland.

10.30 a.m. 4.2.2 Group work:

4.2.2.A Identification of pedagogical problems/challenges.

4.2.2.B Identification of priority content areas.

4.2.2.C Identification of effective teaching methods.

12.30 p.m. Lunch

2.30 p.m. 4.2. Continuation of group work.

4.2.3 To be discussed in all the groups:

4.3 Suggestions for preparation and publication of teachers' practical handbook on the promotion of cooperation and peace through environmental education.

5.00 p.m. Plenary session: presentation and discussion of group work.

6.00 p.m. Performance, Ski upper secondary school.

8.00 p.m. Dinner

Thursday, 11 May

9.00 a.m. 4.3. Environmental education and development at global level.

4.3.A Presentation and discussion of the report of the World Commission for Environmental Development (WCED) as to education and international understanding:
Lloyd Timberlake.

11.00 a.m. 4.3.B Group work:
Elements for a European plan of action for "Our Common Future", "ASP-IEEP"

12.30 p.m. Lunch

2.30 p.m. 4.3.C Regional environmental cooperation to build international security, Arthur Westing, PRIO, Oslo

4.00 p.m. 4.3.D Continuation and conclusion of group work on item 4.3.B-C

5.00 p.m. Plenary presentation of group work.

8.00 p.m. Dinner, given by the Vice-Minister of Cultural and Scientific Affairs.

Friday, 12 May

9.00 a.m. 5. Presentation and adoption of the final report of the seminar and closing ceremony.

11.30 a.m. Lunch

12.30 p.m. Departure

9.5.89

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Oppland Turisthotell, Lillehammer, Norway, 7-12 May 1989

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